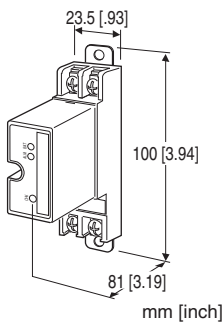


## Lightning Surge Protectors for Electronics Equipment M-RESTER

### LIGHTNING SURGE PROTECTOR FOR STANDARD SIGNAL LINE & PULSE USE

#### Functions & Features

- Designed specifically for 4 - 20mA DC and pulse signal line including both 4-wire and 2-wire transmitters
- Life monitor function helps you to decide when you should replace the surge protector; reduces maintenance and prevents downtime
- Pressing CHK (Check) button confirms the degradation and life span of the surge protection circuits with LEDs
- Absorbs surges only without affecting instrumentation signal
- No interruption of signal by unplugging surge protector element



### MODEL: MDPA-24[1]

#### ORDERING INFORMATION

- Code number: MDPA-24[1]
- Specify a code from below for [1].  
(e.g. MDPA-24/BN/Q)
- Specify the specification for option code /Q  
(e.g. /C01)

#### [1] OPTIONS (multiple selections)

##### Configuration

**blank:** With Base (model: SK-2E) included  
**/BN :** Element only for replacement  
 (Not selectable with DIN rail mounting adapter)

##### DIN Rail Mounting Adapter

**blank:** Without  
**/A33:** With adapter (model A-33)

##### Other Options

**blank:** none  
**/Q:** Option other than the above (specify the specification)

#### SPECIFICATIONS OF OPTION: Q

**COATING (For the detail, refer to our web site.)**

- /C01: Silicone coating
- /C02: Polyurethane coating
- /C03: Rubber coating

#### RELATED PRODUCTS

- Base (model: SK-2E)

#### GENERAL SPECIFICATIONS

**Construction:** Plug-in

**Connection:** M4 screw terminals (torque 0.8 N·m)

**Screw terminal:** Nickel-plated steel

**Housing material:** Flame-resistant resin (black)

**Indicators:** Activated by CHK (Check) button, see the status table shown below.

**BAT:** Green LED

**ALM:** Red LED

**Degradation judged:** When the leakage current at the voltage limiter exceed approx. 7.5  $\mu$ A.

**Life time judged:** When the number of discharges of the discharge element reaches the expected life span.

**CHK button:** Push button; momentary

**Battery:** Lithium; No recharge or replacement available.

**Battery life:** 10 years (when used  $\leq$  2 minutes/month)

BAT	ALM	Battery	Discharge Element	Voltage Limiter	Replacement
☉	●		Normal		No Need
☉	☉	Normal	Near End	Normal	Near
●	☉	Normal	End of Life	Degraded*1	Immediately Required
●	●	Discharged	Unable to Judge		

☉ : ON    ● : OFF

\*1 : With pulsating line signal or that containing ripples, the LED may flicker or blink when the voltage limiter is degraded.

#### INSTALLATION

**Operating temperature:** -5 to +55°C (23 to 131°F)

**Operating humidity:** 30 to 85 %RH (non-condensing)

**Mounting:** Surface or DIN rail

**Weight:** 150 g (0.33 lb), standard

175 g (0.39 lb), with DIN rail mounting adapter

**Capacitance (reference value) @ 1 MHz:**

Line to line: 2000 pF

Line to earth: 100 pF

#### PERFORMANCE

**Max. continuous operating voltage (Uc):**

Line to line: 30 V

Line to earth:  $\pm$ 160 V

**Voltage protection level (Up):**

- @ 1 kV (100 A)  
Line to line: 45 V  
Line to earth:  $\pm 650$  V

- @ 2 kV (1 kA)  
Line to line: 50 V  
Line to earth:  $\pm 650$  V

**Response time:**

- Line to line:  $\leq 4$  nsec.
- Line to earth:  $\leq 20$  nsec.

**Leakage current:**

- Line to line:  $\leq 5 \mu\text{A}$  @ 30 V DC
- Line to earth:  $\leq 5 \mu\text{A}$  @  $\pm 140$  V DC

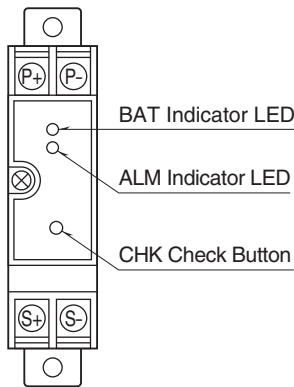
**Max. discharge current ( $I_{\text{max}}$ ):** 5000 A (8 / 20  $\mu\text{s}$ )

**Nominal current ( $I_{\text{n}}$ ):** 100 mA

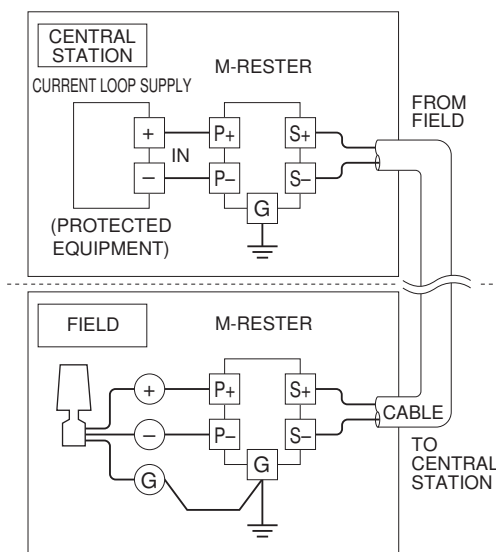
**Internal series resistance:**  $20 \Omega \pm 10\%$  (including return)

**Surge protection:** IEC 61643-21 Categories C1, C2, D1

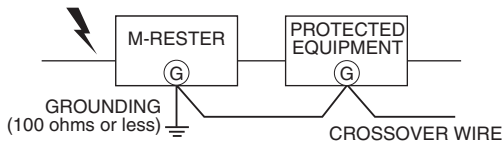
## EXTERNAL VIEW



## CONNECTION EXAMPLES



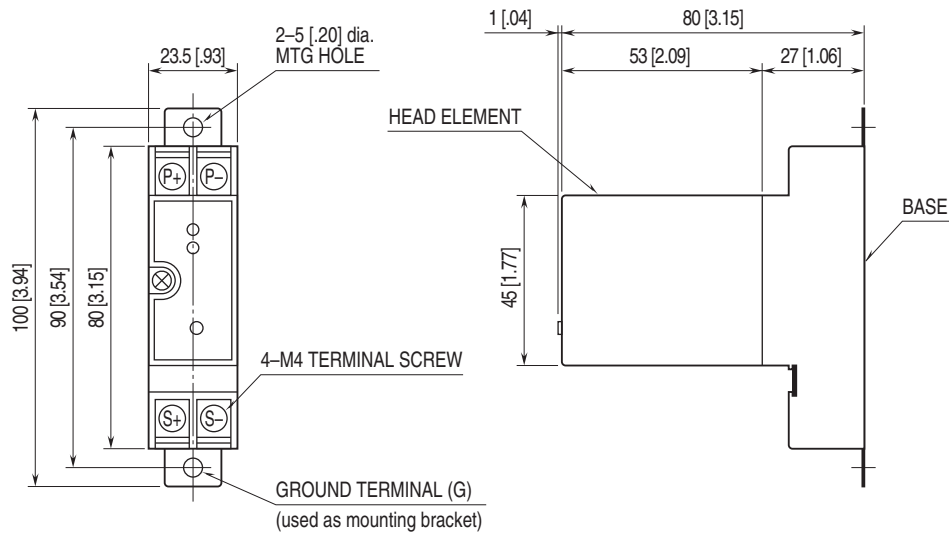
## GROUNDING



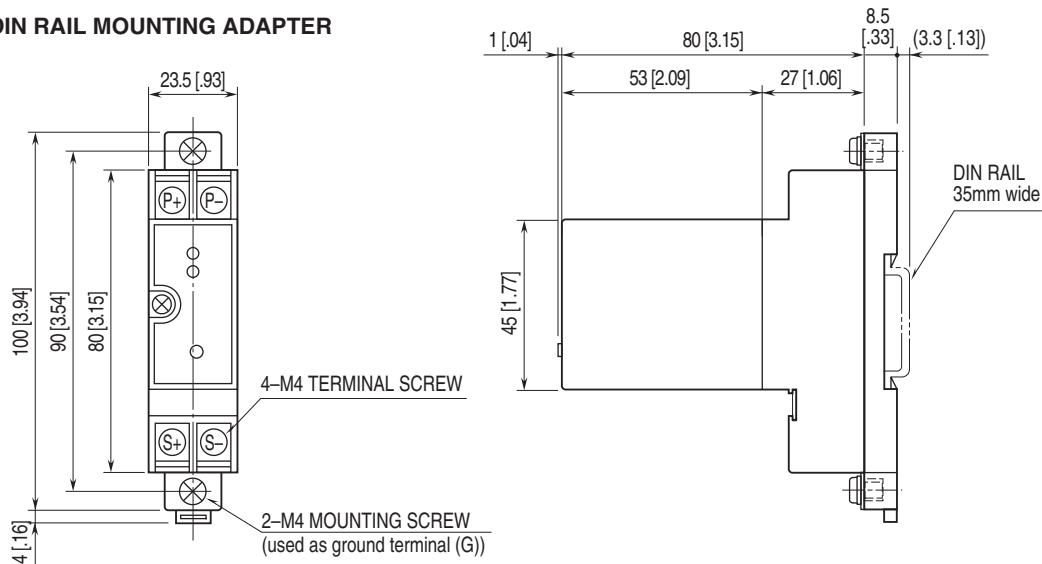
A crossover wire between M-RESTER ground and the ground or metallic housing of the equipment is required for protection. If the protected equipment has no ground terminal, ground the M-RESTER only. When the M-RESTER is mounted with DIN Rail Mounting Adapter, connect the grounding wire to the mounting screw of the M-RESTER.

## EXTERNAL DIMENSIONS & TERMINAL ASSIGNMENTS unit: mm [inch]

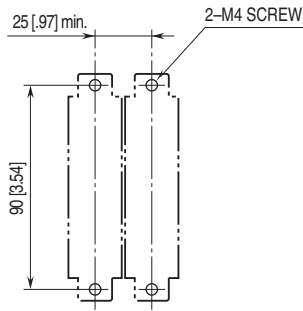
### ■ STADARD



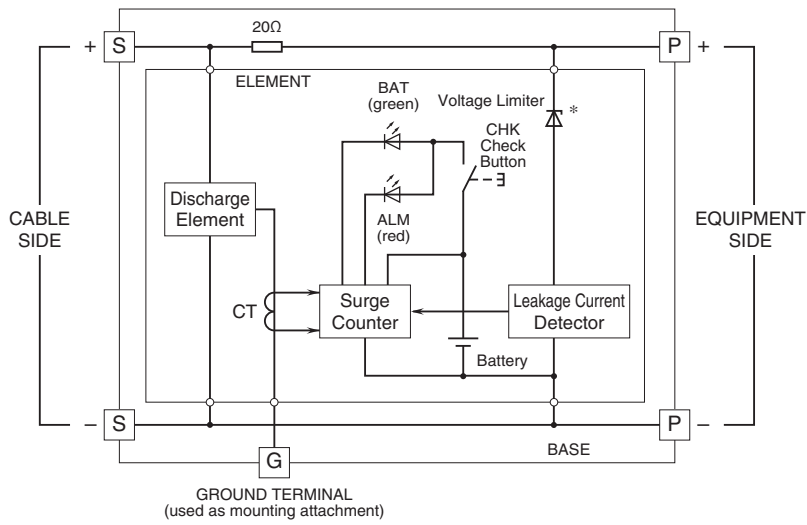
### ■ WITH DIN RAIL MOUNTING ADAPTER



**MOUNTING REQUIREMENTS unit: mm [inch]**



**SCHEMATIC CIRCUITRY & CONNECTION DIAGRAM**



\* The zener diode has polarity.  
Zero-cross signal cannot be connected.



Specifications are subject to change without notice.